

What Is Claimed Is:

1. Apparatus for optically steering an optical beam, the apparatus comprising:

5 a pair of optical prism components arranged together with a diffraction grating so as to allow efficient coupling of an array of spectrally and spatially offset laser diodes to a common optical fiber.

10 2. Apparatus according to claim 1 wherein the pair of optical prism components further comprise a thermo-optic material, and further comprising adjustment means for adjusting the temperature of at least one of the optical prism components of the pair of optical prism components so as to adjustably steer the optical beam.

15 3. Apparatus according to claim 2 wherein the adjustment means comprise at least one selected from a group consisting of heat, an electric field, and a magnetic field.

20 4. Apparatus according to claim 1 wherein the array comprises at least 12 spectrally and spatially offset laser diodes.

5. A method of optically steering at least one of a series of optical beams, the method comprising:

providing a pair of optical prism components comprising a thermo-optic material, the pair of optical prism components configured to steer the at least one of the series of optical beams received from each one of an array of spatially and spectrally offset lasers, and a diffraction grating arranged with the pair of optical prism components so as to couple the at least one of the series of optical beams emitted from the array of spatially and spectrally offset lasers to a common optical fiber;

10 actuating at least one of the pair of optical prism components so as to steer the at least one of the series of optical beams received from each one of an array of spatially and spectrally offset lasers.

15 6. A method of optically steering an optical beam, the method comprising:

providing a pair of optical prism components comprising a thermo-optic material, the pair of optical prism components configured for steering the optical beam so as to allow coupling of spatially and spectrally offset lasers to a common optical fiber; and

actuating the pair of optical prism components by selectively applying to at least one of the optical prism components of the pair at least one selected from a group consisting of heat, an electric field, and a magnetic field.

5        7.        A system for optically steering a series of optical beams, the system comprising:

an array of spectrally and spatially offset laser diodes for generating the series of optical beams;

a collimating lens configured to receive at least one of the series of optical beams generated by the array of spectrally and spatially offset laser diodes;

10        a pair of optical prism components comprising a thermo-optic material, the pair of optical prism components configured to receive the at least one of the series of optical beams collimated through the collimating lens;

a diffraction grating configured to receive the at least one of the series of optical beams from the pair of optical prism components;

15        a focus lens configured to receive the at least one of the series of optical beams from the diffraction grating; and

an optical fiber configured to receive the at least one of the series of optical beams from the focus lens;

wherein the pair of optical prism components are configured to selectively steer at least one of the optical beams so as to allow selective coupling of spatially and spectrally offset lasers to a common optical fiber